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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,897	08/21/2003	Takako Ozawa	Q76398	6409

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EXAMINER	
ANGEBRANNDT, MARTIN J	

ART UNIT	PAPER NUMBER
1756	

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/644,897	OZAWA ET AL.	
	Examiner	Art Unit	
	Martin J. Angebranndt	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 July 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/5/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. The response of the applicant has been read and given careful consideration. The proper terminal disclaimer obviates the double patenting rejection based upon 6924018. The perfection of priority obviates rejection based at least in part upon upon Ozawa et al. '018, Ishida et al. JP 2003-187498 or Kakuta et al. '511

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1,3,4 and 8-17 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Mizushima et al. '596.

Mizushima et al. '596 in example 1 discloses a 1.2 mm thick grooved polycarbonate substrate, coated with an 100 nm Ag, Au, Pd, Pt or Al based reflective layer coated at a pressure of less than 1 Pa and a power of less than 1 kW, followed by a dielectric layer, a 15 nm AgInSbTe phase change recording layer, a second dielectric layer and a 0.6 mm thick

polycarbonate substrate adhered via an adhesive layer. [0067-0085]. Example 2 is similar with the thickness of the polycarbonate substrate being 1.1 mm and grooves adapted for use with a 405 nm laser.

The applicant argues that Mizushima et al. '596 does not voice each and every element recited in the claim. The examiner holds that the sputtering conditions are within those taught in the instant specification (prepub at [0035-0036]) as the sputtering power is 1 kW which is within the preferred 0.3-3 kW and the pressure is very low and in an Argon gas atmosphere. The cited examples are much closer in power to the inventive examples than the comparative examples of the instant specification. The applicant is a position, having the equipment to provide further comparative data. The rejection stands.

5. Claims 1,3,4 and 8-16 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Miki '000.

Miki '000 describes a reflection layer formed on a substrate with a sputtering power of 0.2 kW for the AgPdCu target, 0.6 kW for the Al target and and a pressure of 0.18 pascals, resulting in a roughness of less than 0.75 nm and a thickness of 50 nm, followed by a dielectric layer, a magneto-optic recording layer, a second dielectric layer and a protective layer. The track pitch was 0.39 microns and the thickness of the substrate is 1.2 mm [0051-0081]. The use of other substrate materials is disclosed. [0027].

The applicant argues that Miki '000 does not voice each and every element recited in the claim. The examiner holds that the sputtering conditions are within those taught in the instant specification (prepub at [0035-0036]) as the sputtering power is 0.6 kW which is within the preferred 0.3-3 kW and the pressure is very low and in an Argon gas atmosphere. The cited

examples are much closer in power to the inventive examples than the comparative examples of the instant specification. The applicant is a position, having the equipment to provide further comparative data. The examiner also notes that as the layer is both heat conductive and reflective it performs both functions in the same manner as the applicants reflective layer.

6. Claims 1,3,4 and 8-17 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Ohno '443.

Ohno '443 in example 2 discloses a 1.2 mm thick grooved polycarbonate substrate, coated with an 120 nm Ag based reflective layer coated at a pressure of 0.28 Pa and a power of 200 W (as in example 1), followed by a dielectric layer, a 15 nm GeSbTe phase change recording layer, a second dielectric layer [0117-0118]. Example 4 is similar with the guide grooves being 43 nm deep, 0.3 microns wide and a pitch of 0.6 microns and adapted for use with a 404 nm laser and the Ag sputtered at the same pressure at a power of 500 W. The smoothness of the reflective layer is described as 4 nm, preferably less than 2 nm. [0058]. The reflective layer is described as being applicable to dye based recording media as well as magneto-optic recording media. [0064-0065]. The use of conventional layering to read from the substrate side, or the reverse order to read from the layer side is disclosed. [0005-0006,0079].

The applicant is correct that the measurement is different from the applicant's but the fact that the roughness is a full one order of magnitude where the surface roughness Ra is less than 1 nm as in claim 9 of Ohno '443, so the surface average roughness would be less than this and the number of projections of a size more than 50 nm would be les than 30. See also [0058] of the reference describing the average surface roughness as less than 2 nm, which is more than a order of magnitude less than the 30 nm recited in the instant claims. The rejection stands.

7. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Ohno '443 or Mizushima et al. '596, in view of Ohkubo et al. '857 and Yabe et al. '620.

Ohkubo et al. '857 teach optical recording media optimized for 405 nm, where the pitch of the grooves is 0.3 microns, the width is 100 nm and grove depth of 18-32 nm (5/3-4). The use of an adhesion layer (19) between the reflective layer (16) and the substrate is disclosed with respect to figure 3. (4/10-40). The use of this arrangement with other types of recording layers including dyes based recording layers is disclosed. (8/1-7).

Yabe et al. '620 teach underlayers having thicknesses of 0.1-50 microns to allow formation of the pregrooves. (4/53-66). Various substrate materials are disclosed including acrylic resins, vinyl resins, polycarbonates and epoxies (4/9-22).

It would have been obvious to one skilled in the art to modify the cited examples of either Ohno '443 or Mizushima et al. '596 by adding an underlayer as taught by Ohkubo et al. '857 and Yabe et al. '620 and to provide that layer in the thickness of less than 20 based upon the teachings of Yabe et al. '620 with a reasonable expectation of improving the adhesion between the reflective layer and the substrate. Further, it would have been obvious to use other known substrate materials such as those disclosed by Yabe et al. '620 with a reasonable expectation of forming a useful optical recording medium based upon the disclosure of equivalence.

The claims stand for the reasons articulated above as no further arguments were directed at this rejection.

8. Claims 1,3,4 and 8-20 are rejected under 35 U.S.C. 103(a) as being unpatentable Ohno '443 and over Kawakubo et al. '656.

Kawakubo et al. '656 teach write once recording media where a substrate is provided with the reflective layer, (12) a dyes based recording layer (14) and the protective layer (7/27-8/21).

It would have been obvious to one skilled in the art to modify the examples of Ohno '443 by using dyes based recording layers as taught by Kawakubo et al. '656 with a reasonable expectation of forming a useful optical recording medium.

The claims stand for the reasons articulated above as no further arguments were directed at this rejection.

9. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohno '443, in view of Kawakubo et al. '656, further in view of Ohkubo et al. '857 and Yabe et al. '620.

It would have been obvious to one skilled in the art to modify the optical recording media resulting from the combination of Berneth et al. '807 and Ohno '443 by adding an underlayer as taught by Ohkubo et al. '857 and Yabe et al. '620 and to provide that layer in the thickness of less than 20 based upon the teachings of Yabe et al. '620 with a reasonable expectation of improving the adhesion between the reflective layer and the substrate. Further, it would have been obvious to use other known substrate materials such as those disclosed by Yabe et al. '620 with a reasonable expectation of forming a useful optical recording medium based upon the disclosure of equivalence.

The claims stand for the reasons articulated above as no further arguments were directed at this rejection.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Martin J Angebranndt
Primary Examiner
Art Unit 1756

12/22/2005